

DEPARTMENT SUMMARY

OVERVIEW:

The mission of the Department of Mechanical Engineering is to increase the combat effectiveness of U.S. and Allied armed forces and to enhance the security of the United States through advanced education that focuses on the ability to identify, formulate and solve technical and engineering problems in areas related to mechanical engineering and that spans issues of research, design, development, procurement, operation, maintenance and disposal of components and systems for Naval platforms.

RESEARCH MISSION:

The research mission of the Department of Mechanical Engineering is to increase the combat effectiveness of U.S. and Allied armed forces and to enhance the security of the United States through research in areas related to mechanical engineering and that spans the field from basic phenomena to engineering design, development, operation, maintenance and disposal of components and systems for Naval platforms.

CURRICULA SERVED:

The Mechanical Engineering Department serves the Naval and Mechanical Engineering Curriculum (570) and the Mechanical and Reactors Engineering Curriculum (571). Both curricula are in support of Navy needs for individuals having advanced technical education in mechanical engineering and related fields. The 570 Curriculum provides the educational component for the Engineering Duty Officer program and the research program in the Department is designed to support the requirement for Officers having the ability to identify, formulate and solve technical and engineering problems in areas related to mechanical engineering.

DEGREES GRANTED:

- Master of Science in Mechanical Engineering
- Mechanical Engineer
- Doctor of Philosophy
- Doctor of Engineering

RESEARCH THRUST:

There are five different disciplines of research thrusts such as Fluid Dynamics, Heat Transfer and Turbomachinery; Dynamics Systems, Controls and Robotics; Solid Mechanics, Vibrations, and Shock; Materials Science and Engineering; Total Ship Systems Engineering

FACULTY EXPERTISE:

- Fluid Dynamics, Heat Transfer and Turbomachinery:
Distinguished Professor Turgut Sarpkaya, Professor Matthew Kelleher, Associate Professor Knox Millsaps, Jr., Associate Professor Ashok Gopinath
- Dynamics Systems, Controls and Robotics:
Professor Anthony Healey, Professor Morris Driels, Associate Professor Fotis Papoulias
- Solid Mechanics, Vibration, and Shock:
Professor Young Shin, Professor Young Kwon, Associate Professor Joshua Gordis
- Materials Science and Engineering:
Professor Terry McNelley, Professor Alan Fox, Associate Professor Indranath Dutta
- Total Ship Systems Engineering:
Professor Charles Calvano

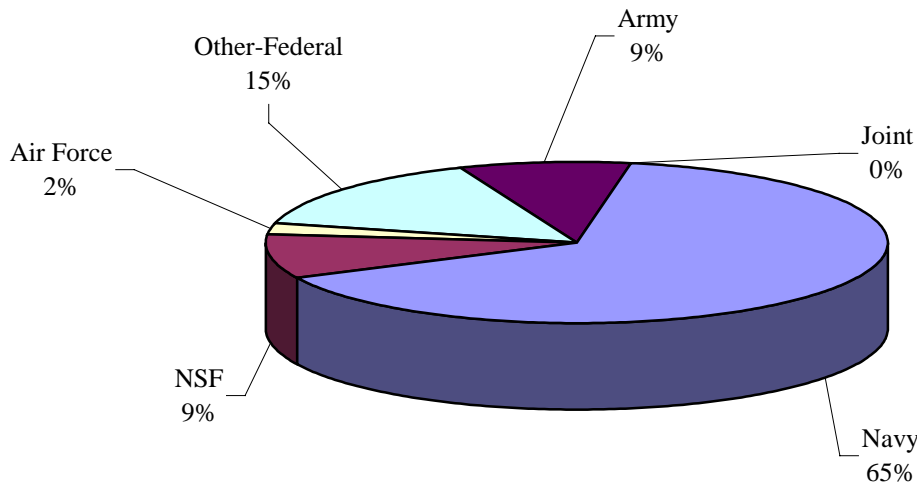
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RESEARCH FACILITIES:

The Mechanical Engineering Laboratories are designed as complements to the educational mission and research interests of the department. In addition to extensive facilities for the support of student and faculty research, a variety of general use equipment is available. This includes equipment and facilities for the investigation of problems in engineering mechanics; a completely equipped materials science laboratory, including advanced scanning electron microscopes, an Auger microprobe, a transmission electron microscope and X-ray diffractometers; an oscillating water tunnel, a unique underwater towing tank and a low turbulence water channel; a vibration analysis laboratory; a fluid power controls laboratory; a robotics and real-time control laboratory; facilities for experimentation with low velocity air flows; equipment for instruction in thermal transport phenomena; a laser doppler velocimeter; nuclear radiation detection equipment and an interactive CAD/CAE computer graphics laboratory. Experimentation is further enhanced by a broad selection of analog and digital data acquisition and processing equipment and instrumentation.

RESEARCH PROGRAM-FY2000:

The Naval Postgraduate School's research program exceeded \$43 million in FY2000. Over 93% of the Naval Postgraduate School Research Program is externally funded. A profile of the external research sponsors for the Department of Mechanical Engineering is provided below along with the size of the FY2000 externally funded program.



Size of Program: \$1414K